



SSC8036GN2

N-Channel Enhancement Mode MOSFET

➤ Features

| VDS | VGS | RDSON Typ. | ID |
|-----|------|------------|----|
| 30V | ±20V | 19mR@10V | 7A |
| | | 32mR@4V5 | |

➤ Description

This device uses advanced trench technology to provide excellent RDSON and low gate charge. This device is suitable for use as a load switch or in PWM applications.

➤ Applications

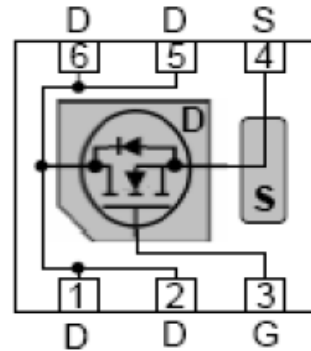
- Load Switch
- Portable Devices
- DCDC conversion

➤ Ordering Information

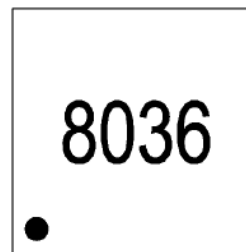
| Device | Package | Shipping |
|------------|---------|-----------|
| SSC8036GN2 | DFN2x2 | 3000/Reel |

➤ Pin configuration

Top view



Bottom View



Marking



➤ **Absolute Maximum Ratings**($T_A=25^{\circ}\text{C}$ unless otherwise noted)

| Symbol | Parameter | Ratings | Unit |
|-----------|---------------------------------------|------------|--------------------|
| V_{DSS} | Drain-to-Source Voltage | 30 | V |
| V_{GSS} | Gate-to-Source Voltage | ± 20 | V |
| I_D | Continuous Drain Current ^a | 7 | A |
| I_{DM} | Pulsed Drain Current ^b | 27 | A |
| P_D | Power Dissipation ^c | 4.4 | W |
| P_{DSM} | Power Dissipation ^a | 1.7 | W |
| T_J | Operation junction temperature | -55 to 150 | $^{\circ}\text{C}$ |
| T_{STG} | Storage temperature range | -55 to 150 | $^{\circ}\text{C}$ |

➤ **Thermal Resistance Ratings**($T_A=25^{\circ}\text{C}$ unless otherwise noted)

| Symbol | Parameter | Typical | Maximum | Unit |
|-----------------|---|---------|---------|-----------------------------|
| $R_{\theta JA}$ | Junction-to-Ambient Thermal Resistance ^a | | 80 | $^{\circ}\text{C}/\text{W}$ |
| $R_{\theta JC}$ | Junction-to-Case Thermal Resistance | | 35 | |

Note:

- The value of $R_{\theta JA}$ is measured with the device mounted on 1 in² FR-4 board with 2oz.copper, in a still air environment with $T_A=25^{\circ}\text{C}$. The value in any given application depends on the user is specific board design. The current rating is based on the $t \leq 10\text{s}$ thermal resistance rating.
- Repetitive rating, pulse width limited by junction temperature.
- The power dissipation P_D is based on $T_{J(MAX)}=150^{\circ}\text{C}$, using junction-to-case thermal resistance, and is more useful in setting the upper dissipation limit for cases where additional heat sinking is used.

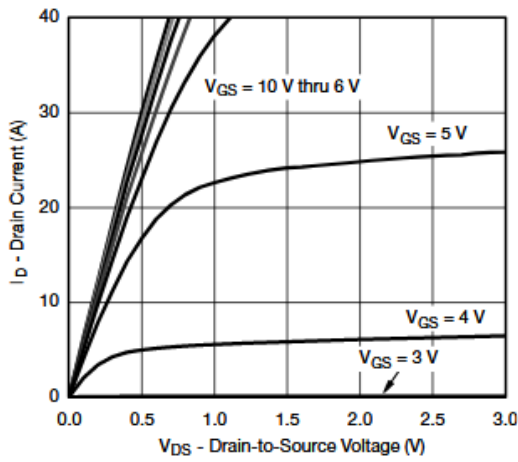


➤ **Electronics Characteristics**($T_A=25^{\circ}\text{C}$ unless otherwise noted)

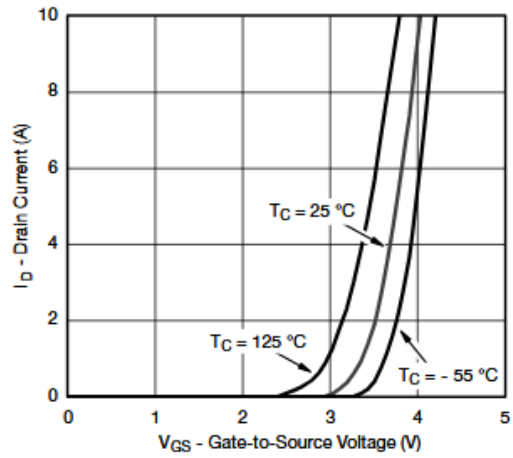
| Symbol | Parameter | Test Conditions | Min | Typ. | Max | Unit |
|---------------|------------------------------------|---|-----|------|-----------|---------|
| $V_{(BR)DSS}$ | Drain-Source Breakdown Voltage | $V_{GS}=0V, I_D=250\mu A$ | 30 | | | V |
| $V_{GS(th)}$ | Gate Threshold Voltage | $V_{DS}=V_{GS}, I_D=250\mu A$ | 1 | 1.5 | 2 | V |
| $R_{DS(on)}$ | Drain-Source On- Resistance | $V_{GS}=10V, I_D=5.8A$ | | 19 | 25 | mR |
| | | $V_{GS}=4.5V, I_D=5A$ | | 32 | 40 | |
| I_{DSS} | Zero Gate Voltage Drain Current | $V_{DS}=24V, V_{GS}=0V$ | | | 1 | μA |
| I_{GSS} | Gate-Source leak current | $V_{GS}=\pm 20V, V_{DS}=0V$ | | | ± 100 | nA |
| G_{FS} | Transconductance | $V_{DS}=5V, I_D=5A$ | | 15 | | S |
| V_{SD} | Forward Voltage | $V_{GS}=0V, I_S=1A$ | | 0.7 | 1 | V |
| C_{iss} | Input Capacitance | $V_{DS}=15V, V_{GS}=0V, f=1MHz$ | | 402 | | pF |
| C_{oss} | Output Capacitance | | | 90 | | |
| C_{rss} | Reverse Transfer Capacitance | | | 63 | | |
| $T_{D(ON)}$ | Turn-on delay time | $V_{GS}=10V,$ $V_{DS}=15V, R_L=2.3R, R_G=3R$ | | 17 | | ns |
| T_r | Rise Time | | | 33 | | |
| $T_{D(OFF)}$ | Turn-off delay time | | | 15 | | |
| T_f | Fall Time | | | 32 | | |
| Q_g | Total Gate charge | $V_{GS}=10V, V_{DS}=10V, I_D=4A$ | | 10.6 | | nC |
| Q_{gs} | Gate to Source charge | | | 1.9 | | |
| Q_{gd} | Gate to Drain charge | | | 2.1 | | |



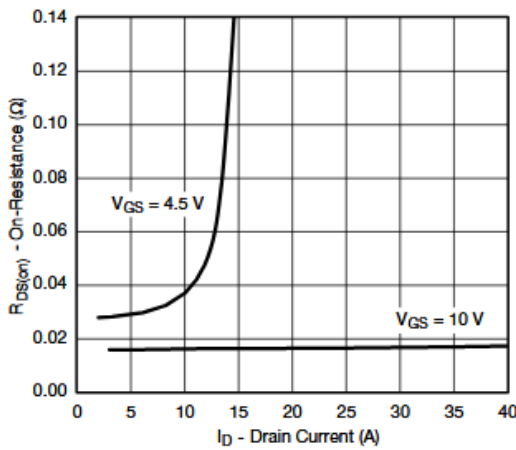
➤ **Typical Characteristics** ($T_A=25^\circ\text{C}$ unless otherwise noted)



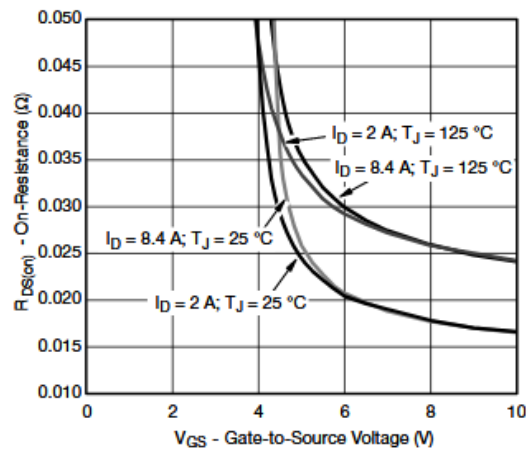
Output Characteristics



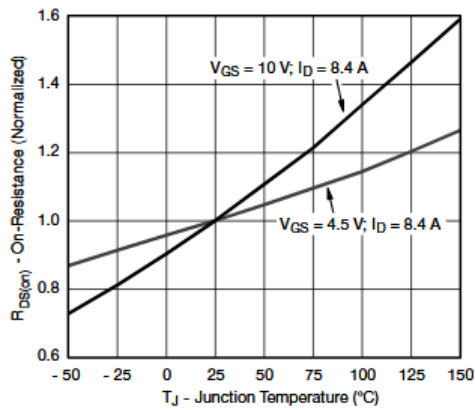
Transfer Characteristics



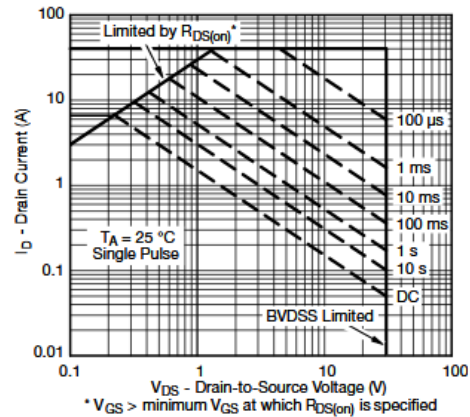
On-Resistance vs. Drain Current



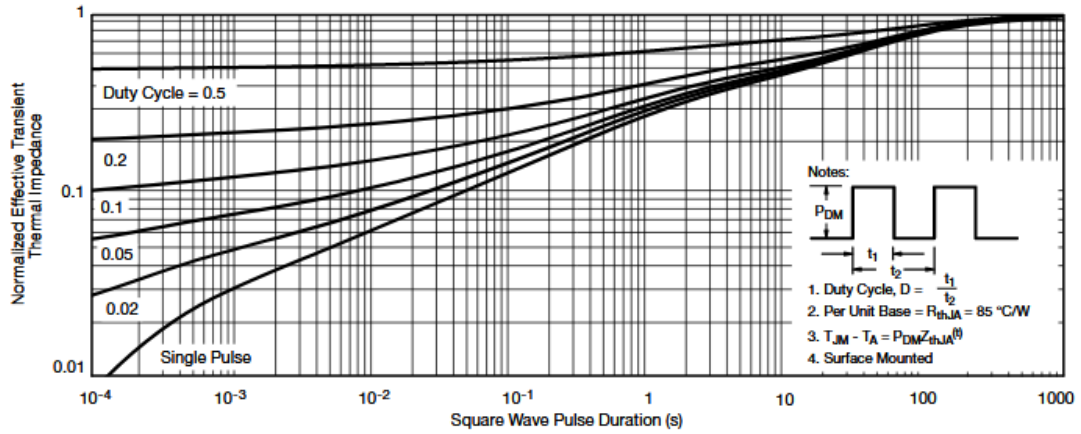
On-Resistance vs. Gate-to-Source Voltage



On-Resistance vs. Junction Temperature



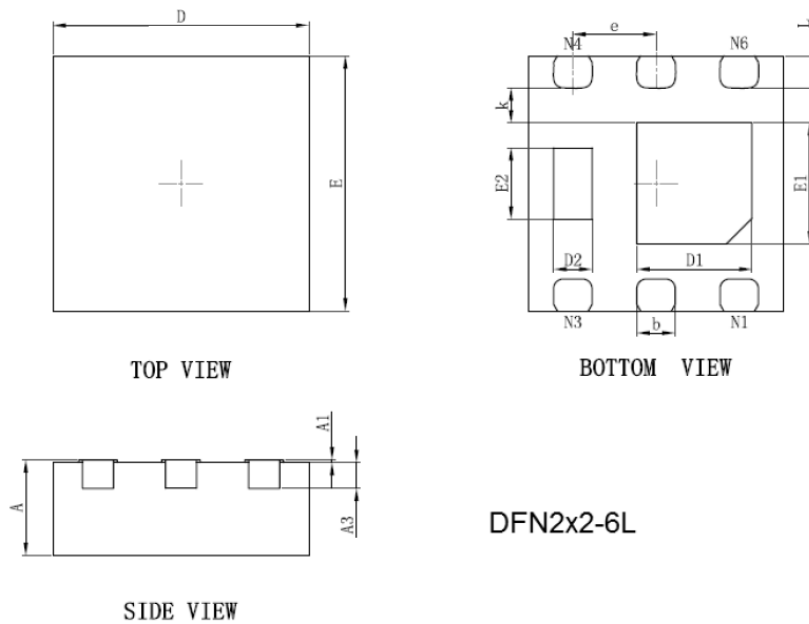
Safe Operating Area, Junction-to-Ambient



Normalized Thermal Transient Impedance, Junction-to-Ambient



➤ Package Information



DFN2x2-6L

| Symbol | Dimensions In Millimeters | |
|--------|---------------------------|-------|
| | Min. | Max. |
| A | 0.700 | 0.800 |
| A1 | 0.000 | 0.050 |
| A3 | 0.203REF. | |
| D | 1.924 | 2.076 |
| E | 1.924 | 2.076 |
| D1 | 0.800 | 1.000 |
| E1 | 0.850 | 1.050 |
| D2 | 0.200 | 0.400 |
| E2 | 0.460 | 0.660 |
| k | 0.200MIN. | |
| b | 0.250 | 0.350 |
| e | 0.650TYP. | |
| L | 0.174 | 0.326 |

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